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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 02/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,647

Applicant(s)

JUN, SAHNG-IK

Examiner

Thoi V Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-34 ~~is/are~~ allowed.
- 6) ☒ Claim(s) 1, 4-9, 35, 37 and 38 ~~is/are~~ rejected.
- 7) ☒ Claim(s) 2,3 and 36 ~~is/are~~ objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This office action is in response to the Amendment, Paper No. 8, filed October 31, 2002.

Accordingly, claims 1-34 were amended, and new claims 35-38 were added.

Currently, claims 1-38 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4-6, 8, 35, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ting et al. (USPN 6,411,357 B1) in view of Haller (USPN 4,888,632).

With respect to claims 1, 4-6 and 8, as shown in Fig. 1, Ting discloses a liquid crystal display (LCD), comprising (col. 2, lines 21-43):

a plurality of gate lines 103 formed on a substrate;

a plurality of data lines 104 insulated from and crossing over said plurality of gate lines;

a plurality of pixel regions defined by the crossing of said plurality of gate lines and said plurality of data lines ;

a common electrode 102 formed in each pixel region;

a pixel electrode 101 formed in each pixel region, spaced apart from said common electrode with a predetermined distance therebetween; and

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a thin film transistor 105 provided to each pixel region and including a semiconductor pattern (see Fig. 3),

where the pixel electrode is formed on the same plane as said plurality of data lines (see Fig. 3).

With respect to claims 35, 37 and 38, as shown in Fig. 1, Ting discloses a LCD comprising a gate line 103 formed on a substrate; a data line 104 insulated from and intersecting the gate line; a thin film transistor connected to said gate line and said data line, said thin film transistor including a semiconductor layer; and a field-generating electrode 102 having a portion laterally spaced apart from said data line 104 with a gap therebetween.

Ting discloses a liquid crystal display that is basically the same as that recited in claim 1 except for a light interception pattern formed of the same material as the semiconductor pattern. As shown in Fig. 1, Haller discloses a thin film transistor structure comprising a semiconductor pattern 20 and a light interception pattern 26 formed of the same material as the semiconductor pattern and overlapping a gate electrode 12 and a portion of both source electrode 22 and drain electrode 24, wherein the semiconductor pattern is connected to said light interception pattern corresponding thereto (col. 3, line 55-59). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Ting with the teaching of Haller by forming a light interception pattern formed of the same material as the semiconductor pattern between the data line and the common electrode so as to obtain high image contrast for the display.

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3. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ting et al. (USPN 6,411,357 B1) in view of Haller (USPN 4,888,632) as applied to claims 1, 4-6, 8, 35, 37 and 38 above and further in view of Lee et al. (USPN 6,485,997 B2).

The LCD of Ting as modified in view of Haller above includes all that is recited in claims 7 and 9 except for the arrangement of the common electrode and the pixel electrode. As shown in Fig. 2C, Lee discloses a LCD comprising a gate bus line 13a formed on a substrate 11, a common electrode 14a formed on the same substrate 11, and a pixel electrode 20 formed on a passivation layer 19. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD of Ting with the teaching of Lee by forming the common electrode on the same plane as the gate lines and the pixel electrode on the plane different from the data lines to simplify the fabrication process.

Allowable Subject Matter

4. Claims 2, 3 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 10-34 are allowed.

The following is an examiner's statement of reasons for allowance:

None of the prior art of record suggests or discloses that a liquid crystal display comprises *"an insulating substrate; a gate line assembly formed on said substrate and comprising a plurality of gate lines, and a plurality of gate electrodes connected to the*

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gate lines; a common electrode formed on the substrate and separated from said gate line assembly; a gate insulating layer covering said gate line assembly and said common electrode; a semiconductor pattern formed on the gate insulating layer over the gate electrodes; a data line assembly comprising a source electrode and a drain electrode formed on said semiconductor pattern, and a plurality of data lines connected to the source electrode and crossing over said plurality of gate lines to define a pixel region; and a pixel electrode formed in the pixel region and alternatively located side by side with the common electrode, wherein the pixel electrode is coupled to the drain electrode" in combination with "a light interception pattern formed of the same material as said semiconductor pattern on the gate insulating layer."

The most relevant reference, USPN 5,247,289 of Matsueda, fails to disclose or suggest a light interception pattern formed of the same material as the semiconductor pattern. The Matsueda's reference discloses a portion of an amorphous silicon layer formed on top of a common electrode; however, this portion does not function as a light intercepting pattern.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

01/27/2003


SUPERVISOR
TECH. CENTER, CHICAGO, ILL. 60601